

What is claimed is:

[Claim 1] 1. A golf ball comprising:

a core; and

a cover formed over the core, the cover composed of a thermosetting polyurethane material formed from reactants comprising at least one polyurethane prepolymer and a curative blend consisting essentially of 4,4'-methylenebis-(2,6-diethyl)-aniline and a second curing agent selected from the group consisting of N,N'-bis-alkyl-p-phenylenediamine, N,N'-dialkylamino-diphenylmethane , N,N'-dialkylamino-diphenylmethane with tetrapropoxylated ethylenediamine, liquid aromatic diamine and an aliphatic diamine;

wherein the cover has an aerodynamic surface geometry thereon.

[Claim 2] 2. The golf ball according to claim 1 further comprising at least one boundary layer disposed between the core and the cover.

[Claim 3] 3. The golf ball according to claim 1 wherein the polyurethane prepolymer is a polypropylene glycol terminated toluene diisocyanate prepolymer with a nitrogen–carbon–oxygen group content ranging from 3.0% to 6.0%.

[Claim 4] 4. The golf ball according to claim 1 wherein the polyurethane prepolymer is a polyester glycol terminated toluene diisocyanate prepolymer with a nitrogen–carbon–oxygen group content ranging from 3.0% to 7.0%.

[Claim 5] 5. The golf ball according to claim 1 wherein the polyurethane prepolymer is a polytetramethylene ether glycol terminated toluene diisocyanate prepolymer with a nitrogen–carbon–oxygen group content ranging from 3.75% to 7.0%.

[Claim 6] 6. A golf ball comprising:

a core comprising a polybutadiene mixture;

a boundary layer formed over the core; and

a cover formed over the boundary layer, the cover composed of a thermosetting polyurethane material formed from reactants comprising a polyester glycol terminated toluene diisocyanate prepolymer with a nitrogen–carbon–oxygen group content ranging from 3.0% to 7.0% and a curative blend consisting essentially of 4,4’-methylenebis-(2,6-diethyl)-aniline in an amount of 65 parts per one hundred parts of the curative blend and N,N’-bis-alkyl-p-phenylenediamine in an amount of 35 parts per one hundred parts of the curative blend;
wherein the cover has an aerodynamic surface geometry thereon.

[Claim 7] 7. A golf ball comprising:

a core comprising a polybutadiene mixture, the core having a diameter ranging from 1.35 inches to 1.64 inches and having a PGA compression ranging from 50 to 90;

a boundary layer formed over the core, the boundary layer composed of a blend of ionomer materials, the boundary layer having a thickness ranging from 0.020 inch to 0.075 inch, the blend of ionomer materials having a Shore D hardness ranging from 50 to 75 as measured according to ASTM-D2240; and

a cover formed over the boundary layer, the cover composed of a thermosetting polyurethane material formed from reactants comprising polytetramethylene ether glycol terminated toluene diisocyanate prepolymer and a curative consisting essentially of 4,4'-methylenebis-(2,6-diethyl)-aniline and a second curing agent selected from the group consisting of N,N'-bis-alkyl-p-phenylenediamine, N,N'-dialkylamino-diphenylmethane , N,N'-dialkylamino-diphenylmethane with tetrapropoxylated ethylenediamine, liquid aromatic diamine and an aliphatic diamine;

wherein the thermosetting polyurethane material has a Shore D hardness ranging from 30 to 60 as measured according to ASTM-D2240, a thickness ranging from 0.015 inch to 0.044 inch, and an aerodynamic surface geometry thereon.